

In re: Hwang, et al.  
Serial No. 09/430,501  
Filed: October 29, 1999  
Page 10 of 11

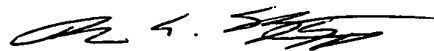
### REMARKS

Applicants appreciate the thorough examination of the present application as evidenced by the Final Office Action of January 10, 2005. Applicants further appreciate the indication that Claims 3-10, 17, 20-27 and 30-37 are allowed, and that Claims 2, 14-16, 19 and 29 would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims. In response, Claims 2, 14, 19 and 29 have been amended to include the recitations of previously pending independent Claims 1, 13, 18 and 28, respectively. Claims 12 and 15 have been amended to depend from Claim 14, and Claims 1, 11, 13, 18 and 28 have been canceled.

In addition, Applicants understand that items 222 and 223 listed in form PTO-1449, which were submitted in the Second Duplicate Submittal of Information Disclosure Statement of September 16, 2003, cannot be located by the Office. As such, Applicants resubmit herewith copies of items 222 and 223 and request an initialed copy of the PTO-1449 form indicating consideration thereof by the Examiner.

Applicants therefore submit that Claims 2-10, 12, 14-17, 19-27 and 29-37 are now in a form indicated as allowable. Applicants further submit that these amendments after final should be entered, as they merely incorporate recitations from dependent claims previously presented into independent claims to place the present application in a form indicated as allowable in the Final Office Action. As such, no new issues have been raised. Thus, Applicants respectfully request entry of this amendment, allowance of all the pending claims and passing this application to issue.

Respectfully submitted,



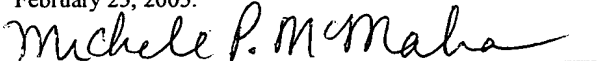
Rohan G. Sabapathypillai  
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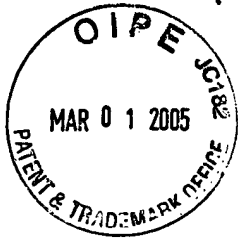
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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 25, 2005.

  
Michele P. McMahan



Item #222

15/3,K/6

DIALOG(R)File 2:INSPEC

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4496918 INSPEC Abstract Number: B9311-6250G-048

Title: A mode switching type \*burst\* demodulator AFC

Author(s): Enomoto, K.; Kubota, S.; Umehira, M.; Kato, S.

Author Affiliation: NTT Radio Commun. Syst. Labs., Yokosuka, Japan

Journal: Transactions of the Institute of Electronics, Information and  
Communication Engineers B-II vol.J76B-II, no.5 p.415-21  
Publication Date: May 1993 Country of Publication: Japan  
CODEN: DTBTEU  
Language: Japanese

Title: A mode switching type \*burst\* demodulator AFC

Abstract: The authors propose a new automatic frequency control (AFC) scheme employing mode switching operation for \*burst\* \*modems\* of the high-\*speed\* satellite TDMA systems. The proposed AFC scheme operates by a sweep-mode at an initial phase, and is switched to a normal-mode by frequency synchronization detection. By employing frequency \*error\* polarity detection, it can avoid a false-lock of carrier frequency. The residual \*error\* at the sweep-mode corresponds to the sweep speed and an AFC gate width, and it can be reduced by a sweep polarity control scheme. Moreover, the characteristics of the \*burst\* modem with the proposed AFC scheme are shown with satisfactory experimental results.

...Identifiers: \*burst\* modems...

...frequency \*error\* polarity detection



Item # 223

15/3,K/7  
DIALOG(R)File 2:INSPEC  
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04292882 INSPEC Abstract Number: B9301-6220W-002

Title: Nonlinear encoding by surface projection

Author(s): Betts, W.

Conference Title: International Conference on Data Transmission -  
Advances in Modem and ISDN Technology and Applications (Conf. Publ. No.356)  
p.7-12

Publisher: IEE, London, UK

Publication Date: 1992 Country of Publication: UK vii+156 pp.

ISBN: 0 85296 552 4

Conference Sponsor: IEE; ACM; British Comput. Soc

Conference Date: 23-25 Sept. 1992 Conference Location: London, UK

Language: English

Abstract: High \*speed\* quadrature amplitude modulated \*modems\* use dense signal constellations to transmit multiple bits of information in each symbol \*interval\*. Modem tests reveal a significant increase in distortion near the perimeter of the signal constellation caused by signal-dependent impairments. A nonlinear encoding technique \*reduces\* perimeter distortion. The encoder projects the signal constellation points on a nonlinear surface prior to modulation. This surface may, for example, increase the margin or

Identifiers: perimeter distortion \*reduction\*;